

PART V. PLAINTIFF'S WITNESSES AND SUMMARY OF THEIR TESTIMONY

Plaintiff intends to call the following witnesses with regard to liability and damages and anticipates they will testify as follows:

A. Will Call for Live Testimony

Witness	Summary of Testimony
Chris Pershing c/o WALSH PIZZI O'REILLY FALANGA LLP One Riverfront Plaza 1037 Raymond Blvd., Suite 600 Newark, New Jersey 07102	Mr. Pershing founded EagleView and served as its Chief Technology Officer until 2016. Mr. Pershing is an inventor of the Asserted Patents. He will testify regarding the success of the patented technologies and praise for the patented technologies, including by Defendants. He will also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: the conception and reduction to practice of certain of the claimed inventions; the prosecution of certain of the Asserted Patents; EagleView's ownership of the Asserted Patents; technical aspects regarding Plaintiff's products that practice inventions claimed in certain of the Asserted Patents and sales thereof; EagleView's knowledge and review of the Accused Products; infringement of the Accused Products; Defendants' willful infringement; non-infringing alternatives for the claimed inventions of the Asserted Patents; products that embody or practice the claimed inventions of the Asserted Patents; secondary considerations supporting that the patented claims are not obvious; validity of the Asserted Claims of the Asserted Patents; the priority dates of the Asserted Claims of the Asserted Patents; prior art Xactware has asserted against the Asserted Claims of the Asserted Patents; Defendants' willful infringement. He will also testify regarding other subject matter about which he testified at his deposition.
Rishi Daga c/o WALSH PIZZI O'REILLY FALANGA LLP One Riverfront Plaza 1037 Raymond Blvd., Suite 600 Newark, New Jersey 07102	Mr. Daga joined EagleView in 2008 and is currently EagleView's Chief Executive Officer. He will testify regarding the success of the patented technologies and praise for the patented technologies, including by Defendants. He will also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: EagleView's corporate structure and ownership; communications among EagleView, Pictometry, and EagleView Technology Corporation; EagleView's ownership of the Asserted

Witness	Summary of Testimony
	<p>Patents; Verisk's intended acquisition of EagleView Technology Corporation; circumstances of creation of EagleView Technology Corporation; factual basis for EagleView's claim for damages in this case; products that embody or practice the claimed inventions of the Asserted Patents; demand for EagleView's patented technology and products; non-infringing alternatives for the claimed inventions of the Asserted Patents; EagleView's business; financial data relating to EagleView's products that practice the claimed inventions of the Asserted Patents; EagleView's competitors and market share; valuation of EagleView's patents; licenses or other agreements concerning EagleView's patents; EagleView's knowledge and understanding of the suppliers of rooftop aerial measurement products in the market; secondary considerations supporting that the patented claims are not obvious; facts and circumstances relating to the price decline of EagleView's products over the years; EagleView's loss of certain customer accounts; Xactware's impact on EagleView's pricing and sales; EagleView's capacity to meet customer orders of EagleView's products; impact of price pressure from Xactware on EagleView roof report revenue; EagleView's products, marketing, customers, market share, and competitors; EagleView's prior and current practices for marking products with each of the Asserted Patents; EagleView's irreparable harm from Defendants' infringement; Defendants' willful infringement; EagleView's marking practices; damages resulting from Defendants' willful infringement; Verisk's intended acquisition of EagleView. He will also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Hugh West</p> <p>c/o WALSH PIZZI O'REILLY FALANGA LLP One Riverfront Plaza 1037 Raymond Blvd., Suite 600 Newark, New Jersey 07102</p>	<p>Mr. West is the Vice President of Insurance Sales at EagleView. He will testify regarding, among other things, the following: the success of the patented technologies and praise for the patented technologies, including by Defendants; facts and circumstances relating to the price decline of EagleView's products over the years; demand for Eagle View's patented technology and products; EagleView's competitors and market share; valuation of EagleView's patents; EagleView's knowledge and understanding of the suppliers of rooftop aerial measurement products in the market; demand for Eagle View's patented technology and products; EagleView's</p>

Witness	Summary of Testimony
	loss of certain customer accounts; Xactware's impact on EagleView's pricing and sales; EagleView's capacity to meet customer orders of EagleView's products; impact of price pressure from Xactware on EagleView roof report revenue; EagleView's products, marketing, customers, market share, and competitors; EagleView's irreparable harm from Defendants' infringement; Defendants' willful infringement; damages resulting from Defendants' willful infringement of the Asserted Patents. He will also testify regarding other subject matter which he may testify about at his deposition.

B. May Call for Live Testimony or by Deposition

Witness	Summary of Testimony
Chris Barrow c/o WALSH PIZZI O'REILLY FALANGA LLP One Riverfront Plaza 1037 Raymond Blvd., Suite 600 Newark, New Jersey 07102	Mr. Barrow is the former Chief Executive Officer of EagleView. He may testify regarding the success of the patented technologies and praise for the patented technologies, including by Defendants. He may also testify regarding, among other things, competition by EagleView competitors, Verisk's intended acquisition of EagleView, EagleView marketing practices, EagleView customers, EagleView finance, Defendants' willful infringement, and damages resulting from Defendants' willful infringement of the Asserted Patents. He will also testify regarding other subject matter about which he testified at his deposition.
Matt Quilter c/o WALSH PIZZI O'REILLY FALANGA LLP One Riverfront Plaza 1037 Raymond Blvd., Suite 600 Newark, New Jersey 07102	Mr. Quilter is the Chief Financial Officer of EagleView. He may testify regarding the success of the patented technologies and praise for the patented technologies, including by Defendants. He may also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: EagleView's corporate structure and ownership; EagleView's ownership of the Asserted Patents; sales data regarding EagleView's products that practice the claimed inventions of the Asserted Patents; pricing of EagleView's products that practice the claimed inventions of the Asserted Patents; profits and loss relating to the marketing and sale of EagleView's products that practice the claimed inventions of the Asserted Patents. He will also testify regarding other subject matter about which he testified at

Witness	Summary of Testimony
	his deposition.
Jeffery Lewis (Xactware) c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102	Mr. Lewis is the Senior Vice President of Engineering at Geomni Inc. He may testify regarding praise for the patented inventions, including by Defendants. He may also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: the Accused Products; Defendants' designations for Accused Products and any components of the Accused Products; design, development, functionality, architecture, implementation, operation, and features of the Accused Products and any components of the Accused Products; differences in design or operation of different versions or generations of the Accused Products and any components of the Accused Products; organization of source code related to the Accused Products and any components of the Accused Products; use of the Accused Products and any components of the Accused Products; research, design, use, development, manufacturing, marketing, servicing, sales or other product administration or support for the Accused Products and any components of the Accused Products; testing, quality control, and debugging of the Accused Products and any components of the Accused Products; similarities or differences between EagleView's aerial rooftop measurement products or software and those of Defendants; any efforts, attempts, or plans by Defendants to design, redesign, commercialize, or modify any Accused Products and any components of the Accused Products; relative importance and valuation of the individual features of the Accused Products and any components of the Accused Products; Defendants' facts, theories, and arguments underlying any contention by Defendants that any Accused Product does not infringe the Asserted Patents; source code and documentation related to the Accused Products and any components of the Accused Products; communications regarding the scope of the claims of the Asserted Patents, infringement of the claims of the asserted Patents by Defendants or any other party, and/or the enforceability of the Asserted Patents; Defendants' positions on the validity, enforceability, or infringement by Defendants of any Asserted Patents; Defendants' contentions, affirmative defenses, or counterclaims related to infringement by Defendants of the Asserted Patents. He may also testify regarding other

Witness	Summary of Testimony
	subject matter about which he testified at his deposition.
<p>Jeffery Taylor (Xactware)</p> <p>c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102</p>	<p>Mr. Taylor is the President at Geomni Inc. and a former Vice President of Property InSight Group at Xactware. He may testify regarding praise for the patented inventions, including by Defendants. He may also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: the Accused Products, the Asserted Patents and how the Accused Products practice the same; marketing regarding the Accused Products; intended and/or target customers and end users of Accused Products; the impetus for designing, developing, and selling the Accused Products; third party involvement in design, development, programming, creation, marketing, sale, or resale of the Accused Products; Defendants' strategy and methodology to generate new products, potential new products, and product development ideas; communications with any users, purchasers, customers, or licensees regarding the Accused Products; activities of Geomni related to the Accused Products; Interaction between Geomni and Verisk; market research, market analyses, business plans, forecasts, marketing plans and/or user evaluations directed to the Accused Products; commercial success and profitability of the Accused Products; value of the Accused Products and any products that compete with the Accused Products; financial information related to the Accused Products; EagleView's products and technology; Defendants' interactions and exchange of information with EagleView; Defendants' knowledge of the Asserted Patents; communications with Defendants' customers; activities of Geomni; Defendants' policies and procedures for assessing and responding to patent infringement risks; and damages resulting from Defendants' infringement of the Asserted Patents, and relating to the reduction to practice of certain of the claimed inventions. He may also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Mike Fulton (Xactware)</p> <p>c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102</p>	<p>Mr. Fulton is the President of Xactware. He may testify regarding praise for the patented inventions, including by Defendants. He may also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: Xactware's customers' use of the Accused Products; training, manuals,</p>

Witness	Summary of Testimony
	and other documentations provided to Xactware's customers or users/purchasers of the Accused Products relating to the Accused Products; Xactware's effort to emulate or replicate any of EagleView's technologies or products; Xactware's organizational structure relating to the Accused Products; interactions among Insurance Services Office, Xactware, and Verisk; products that compete with the Accused products; marketing and promotion of the Accused Products; the relevant markets in which the Accused Products compete, Xactware's share in those markets, and the product characteristics or features necessary to be part of those markets; Xactware's products intended to be used in conjunction with the Accused Products. He may also testify regarding other subject matter about which he testified at his deposition.
Edmund Webecke (Xactware) c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102	Mr. Webecke is a Vice President at Xactware. He may testify regarding praise for the patented inventions, including by Defendants. He may also testify regarding the subject matter of the Rule 30(b)(6) topics on which he was designated to testify, including the following: the Accused Products, the Asserted Patents and how the Accused Products practice the same, and sales information related to the Accused Products. He may also testify regarding other subject matter about which he testified at his deposition.
James Loveland (Xactware) c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102	Mr. Loveland was formerly the President and Chief Executive Officer of Xactware, and was formerly the President of Verisk. He may testify regarding, among other things, praise for the patented inventions, including by Defendants, dates and circumstances relating to when and how Defendants first learned of the Asserted Patents, EagleView, and EagleView's products; Defendants' efforts to market, advertise, or promote itself as similar to EagleView, or to promote the Accused Products and any components of the Accused Products; Defendants' assessment, consideration, or review of EagleView's products or patents; EagleView's source code, products, software, documents, or technical documentation in the possession or control of Defendants, and the circumstances by which Defendants acquired them; commercial relationship between EagleView and Defendants; Defendants' corporate structure, including all of Defendants' predecessors-in-interest, subsidiaries, parents,

Witness	Summary of Testimony
	<p>holding companies, related corporations and affiliates; Defendants' practice and procedure for assessing patent infringement risks, and how those practices and procedures have been applied regarding the Accused Products; any alleged non-infringing alternatives to the Accused Products; Defendants' belief regarding its willful infringement of the Asserted Patents; documents, opinions, or communications related to the validity of the Accused Patents or the Accused Products in view of the Asserted Patents; Defendants' license agreements related to the Accused Products or that are comparable to a license that Defendants would have taken in a hypothetical negotiation in this case; Defendants' policies and/or business plans concerning the licensing of the Accused Products or intellectual property covering the Accused Products; Defendants' contentions regarding the level of ordinary skill in the art for the Asserted Patents; Defendants' contentions that the Asserted Patents are unenforceable. He may also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Peter Magnus Olson (Xactware)</p> <p>c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102</p>	<p>Mr. Olson is the Senior Vice President of Data & Production at Geomni, and was formerly the Assistant Vice President of Geospatial Data Services and the Director of Imagery Services at Xactware. He may testify, among other things, praise for the patented inventions, including by Defendants, the Accused Products, Defendants' policies and procedures for assessing and responding to patent infringement risks, the Asserted Patents and how the Accused Products practice the same. He may also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Jason Merrill (Xactware)</p> <p>c/o McCarter & English LLP Four Gateway Center 100 Mulberry Street Newark, New Jersey 07102</p>	<p>Mr. Merrill is the Assistant Vice President of Finance at Xactware. He may testify regarding, among other things, praise for the patented inventions, including by Defendants, Xactware's finances and financial statements (e.g., sales and cost data, invoice statement), as well as contracts Xactware has entered into. He may also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Matthew Levin (Metropolitan Property and Casualty Insurance Company)</p>	<p>Mr. Levin is a claim technical administrator at MetLife. He may testify regarding, among other things, praise for the patented inventions, including by Defendants,</p>

Witness	Summary of Testimony
<p>(“MetLife”)</p> <p>c/o Robinson & Cole LLP One Financial Plaza Suite 1430 Providence, RI 02903</p>	<p>EagleView’s products, the Accused Products, damages in this case, and MetLife’s decisions regarding whether to buy or use EagleView’s products and/or Xactware’s products. He may also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Jason Pawlik (Hartford Financial Services Group, Inc. (“The Hartford”))</p> <p>c/o The Hartford Law Department One Hartford Plaza H0-1-10 Hartford, CT 06155</p>	<p>Mr. Pawlik is a Director of Claims Strategy at The Hartford. He may testify regarding, among other things, praise for the patented inventions, including by Defendants, EagleView’s products, the Accused Products, damages in this case, and The Hartford’s decisions regarding whether to buy or use EagleView’s products and/or Xactware’s products. He may also testify regarding other subject matter about which he testified at his deposition.</p>
<p>Michael Allen (United Services Automobile Association (“USAA”))</p> <p>c/o Ford Murray 10001 Reunion Place, Suite 640 San Antonio, TX 78216</p>	<p>Mr. Allen is a claims service manager at USAA. He may testify regarding, among other things, praise for the patented inventions, including by Defendants, EagleView’s products, the Accused Products, damages in this case, USAA’s decisions regarding whether to buy or use EagleView’s products and/or Xactware’s products. He will also testify regarding other subject matter about which he testified at his deposition.</p>

Eagle View Technologies, Inc. et al. v. Xactware Solutions, Inc. et. al.
Case No. 15-cv-07025 (RBK/JS) (Dist. N.J.)

Plaintiff's Affirmative Designations

Michael Allen (March 29, 2018)								
Plaintiff's Designations		Defendants' Objections	Defendants' Counter-Designations		Plaintiff's Objections to Defendants' Counter-Designations	Plaintiff's Counter-Counter Designations		Defendants' Objections to Plaintiff's Counter-Counter Designations
Line Start	Line End		Line Start	Line End		Line Start	Line End	
4:22	4:24							
6:5	7:1							
7:24	8:5							
10:21	11:3	V, SP, ID	11:9	11:20	F, Spec, V			
14:13	15:17	ID, Cmpd, SP, PK, V, F	41:6 42:19	41:24 43:14	F, Spec, V, H, Cmpd, Char F, Spec, H, Char, P	17:14 17:14	17:19 17:19	SP, PK SP, PK
17:1	17:3	ID, SP	41:6 42:19	41:24 44:5	F, Spec, V, H, Cmpd, Char F, Spec, H, Char, P	17:14 17:14	17:19 17:19	SP, PK SP, PK
23:22	24:5							
24:9	24:25	ID, PK, SP, V	26:16 41:6 42:19	26:21 41:24 44:5	F, Spec, V F, Spec, V, H, Cmpd, Char F, Spec, H, Char, P	17:14 17:14	17:19 17:19	SP, PK SP, PK
25:1	25:2	ID, F, NE	26:16 41:6 42:19	26:21 41:24 43:14	F, Spec, V F, Spec, V, H, Cmpd, Char F, Spec, H, Char, P	17:14 17:14	17:19 17:19	SP, PK SP, PK
25:4	25:24	ID, M, V, PK, SP	26:16 41:6 42:19	26:21 41:24 44:5	F, Spec, V F, Spec, V, H, Cmpd, Char F, Spec, H, Char, P	17:14 17:14	17:19 17:19	SP, PK SP, PK
27:19	27:25	PK, A, SP, H						
28:1	28:11	R, ID, PK, A, SP, H	28:24	29:3	F, V, Spec	20:9	20:12	
28:12	28:17	ID, PK, A, SP, H	27:19 28:24	27:22 29:3	F, V F, V, Spec	20:9	20:12	
31:10	31:12	NR, V, SP, PK, A, H						

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Case No. 15-cv-07025 (RBK/JS) (Dist. N.J.)

Plaintiff's Affirmative Designations

Michael Allen (March 29, 2018)								
Plaintiff's Designations		Defendants' Objections	Defendants' Counter-Designations		Plaintiff's Objections to Defendants' Counter-Designations	Plaintiff's Counter-Counter Designations		Defendants' Objections to Plaintiff's Counter-Counter Designations
Line Start	Line End		Line Start	Line End		Line Start	Line End	
31:15	31:17	LD, V,						
32:7	32:12	MD, V, LD, A, H, PK, SP, BSS						
34:10	34:21	H						
40:20	40:23	ID, LD, F, V, SP, PK	40:7 40:13 40:18	40:11 40:16 40:19	F, V, Spec F, Spec F, Spec			
42:4	42:9	ID	41:6	42:3	F, Spec, V, H, Cmpd, Char	17:14	17:19	SP, PK
42:10	42:13	ID	41:6 42:19	42:3 44:5	F, Spec, V, H, Cmpd, Char F, Spec, H, Char, P	17:14 17:14	17:19 17:19	SP, PK SP, PK
44:11	44:14							
49:24	49:25	V, SP, PK, NE						
50:2	50:3	V, SP, PK						
53:10	53:12	ID, LD, V, NE	52:17 53:1	52:18 53:9	F, V, Spec F, V, Spec			
53:18	53:20	SP, PK, ID, LD, V, NE	52:17 53:1	52:18 53:9	F, V, Spec F, V, Spec			
53:22	53:22	ID	52:17 53:1	52:18 53:9	F, V, Spec F, V, Spec			
56:17	57:1	ID, SP, PK, V D, A, F	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC

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Plaintiff's Affirmative Designations

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Line Start	Line End		Line Start	Line End		Line Start	Line End	
57:5	57:5	ID, SP, PK, V D, A, SP, F	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
57:11	57:19	ID, PK, D, A, SP, V, LD, H, SP	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
57:20	57:23	ID, PK, D, A, SP, V, LD, H	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
58:4	58:9	ID, D, A, SP, PK, V, LD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
58:14	58:16	ID, PK, D, A, SP, V, LD, H	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
58:20	59:9	ID, PK, D, A, SP, V, LD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
59:12	59:17	ID, D, A, SP, V, LD, H, PK	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
59:19	59:20	ID, D, A, SP, V, LD, H, PK	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
59:21	59:23	ID, D, A, SP, V, LD, H, PK, 1002	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
60:1	60:1	ID, PK, D, A, SP, V, LD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
60:2	60:4	ID, PK, D, A, SP, V, LD, MD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
60:8	60:9	ID, PK, A, SP, V, LD,	57:6	57:10	F, V, Spec			R, V, IC

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Plaintiff's Affirmative Designations

Michael Allen (March 29, 2018)								
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Line Start	Line End		Line Start	Line End		Line Start	Line End	
		D, MD	57:24	58:2	F, V, Spec	12:17	12:18	
60:12	61:7	ID, PK, D, A, SP, V, LD, MD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
61:11	61:14	ID, PK, D, A, SP, V, LD, MD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
61:20	61:20	ID, PK, D, A, SP, V, LD, MD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
61:23	61:25	ID, PK, D, A, SP, V, LD, MD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
62:3	62:6	ID, PK, D, A, SP, V, LD, MD, Cmpd	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
62:9	62:9	ID, PK, D, A, SP, V, LD, MD, Cmpd	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
62:10	62:20	ID, PK, A, SP, V, LD, D, MD	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC
63:7	63:10	PK, V, LD, M	57:6 57:24	57:10 58:2	F, V, Spec F, V, Spec	12:17	12:18	R, V, IC

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Plaintiff's Affirmative Designations

Mike Fulton (October 4, 2017)								
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Line Start	Line End		Line Start	Line End		Line Start	Line End	
8:22	8:24							
9:6	9:11							
14:3	14:7							
22:12	23:7	LC, SP, BST, V						
23:8	23:16							
23:17	23:25							
24:1	24:5							
24:10	24:16		24:17	24:22				
24:23	25:17	M, NE, F, V						
37:14	37:17	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M						
37:20	37:22	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M						
37:23	38:1	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M						
38:3	38:3	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M	38:4	38:11	P, R	38:12	38:15	IC
39:22	39:23	ID, LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering	39:16 39:21	39:17 39:21	C, P, R, U			

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Line Start	Line End		Line Start	Line End		Line Start	Line End	
40:1	40:1	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering	39:16 39:21	39:17 39:21	C, P, R, U			
46:12	46:14	ID, LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering	46:15	46:15				
46:20	46:20	ID, LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering						
50:6	50:8	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering						
50:12	50:13	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering						
53:10	53:12	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering						
53:15	53:17	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, M, C, Badgering						
54:22	54:24	V, P, PK, SP, R, Arg, BST, C						
55:2	55:5	V, P, PK, SP, R, Arg, BST, C						

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Mike Fulton (October 4, 2017)								
Plaintiff's Designations		Defendants' Objections	Defendants' Counter-Designations		Plaintiff's Objections to Defendants' Counter-Designations	Plaintiff's Counter-Counter Designations		Defendants' Objections to Plaintiff's Counter-Counter Designations
Line Start	Line End		Line Start	Line End		Line Start	Line End	
57:7	57:12	LC, IO, F, NE, V, P, PK, SP, R, Arg, BST, C, Badgering	56:24 57:2	56:25 57:6	C, P, R, U			
64:1	64:6	LC, IO, F, NE, V, P, PK, SP, Arg, BST, C, Badgering						
64:11	64:11	LC, IO, F, NE, V, P, PK, SP, Arg, BST, C, Badgering						
65:15	65:20	R, C, P						
66:10	66:11	R, C, P, SP, PK						
66:14	66:19	R, C, P, SP, PK						
66:20	67:4	R, C, P, SP, PK						
72:17	72:20	R, C, P, SP, PK						
74:10	74:13	R, C, P, SP, PK						
80:2	80:3	NT						
80:18	81:2	A, NE, F	80:7	80:13	NT (80:9)	80:14	80:17	
83:5	84:12	A, NE, F, 1002, SP, PK	80:7	80:13	NT (80:9)	80:14	80:17	
84:14	84:15	A, NE, F, 1002, SP, PK	80:7	80:13	NT (80:9)	80:14	80:17	
92:4	92:23	A, NE, F, 1002, SP, PK						
99:5	99:9	NE, F, V, R, BST	99:10	99:21				

Eagle View Technologies, Inc. et al. v. Xactware Solutions, Inc. et. al.
Case No. 15-cv-07025 (RBK/JS) (Dist. N.J.)

Plaintiff's Affirmative Designations

Mike Fulton (October 4, 2017)								
Plaintiff's Designations		Defendants' Objections	Defendants' Counter-Designations		Plaintiff's Objections to Defendants' Counter-Designations	Plaintiff's Counter-Counter Designations		Defendants' Objections to Plaintiff's Counter-Counter Designations
Line Start	Line End		Line Start	Line End		Line Start	Line End	
99:22	100:12	NE, F, V, M, R, BST	100:13 100:20	100:17 102:1	C, P, R; IC (100:20-23); AT (101:13-16)	100:18	100:19	IC
104:4	104:14	A, NE, F, 1002, SP, PK	80:7	80:13	NT (80:9)	80:14	80:17	
104:15	105:9	A, NE, F, 1002, SP, PK	80:7	80:13	NT (80:9)	80:14	80:17	
105:18	105:23	A, NE, F, 1002, SP, PK	80:7 105:24	80:13 106:14	NT (80:9)	80:14	80:17	
106:15	106:24	A, NE, F, 1002, SP, PK	80:7	80:13	NT (80:9)	80:14	80:17	
120:18	120:25	A, NE, F, 1002, SP, PK, M, BST	80:7	80:13	NT (80:9)	80:14	80:17	
121:15	122:3	A, NE, F, 1002, SP, PK, C	80:7	80:13	NT (80:9)	80:14	80:17	
125:13	125:23	A, NE, F, 1002, SP, PK, R	80:7	80:13	NT (80:9)	80:14	80:17	
125:24	126:2	R	126:8 127:10	126:16 127:20		126:27; 127:21; 128:4	127:9; 128:1; 128:6	IC; F; V (for all)
128:23	128:24	R, 1002, SP, PK						
128:23	128:25	R, 1002, SP, PK						
129:2	129:5	R, 1002, SP, PK	129:6 129:11	129:8 129:12		129:13	129:15	M; F; NE; PK; SP
129:19	130:2	F, NE, M, MD, H, SP,	129:6	129:8		129:13	129:15	M; F; NE; PK; SP

Eagle View Technologies, Inc. et al. v. Xactware Solutions, Inc. et. al.
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Plaintiff's Affirmative Designations

Mike Fulton (October 4, 2017)								
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Line Start	Line End		Line Start	Line End		Line Start	Line End	
		PK	129:11 130:3 130:7	129:12 130:4 130:20				
130:21	130:24	M, P, R, NE, F, Arg	129:6 129:11 130:3 130:7	129:8 129:12 130:4 130:20		129:13	129:15	M; F; NE; PK; SP
131:1	131:1	M, P, R, NE, F	129:6 129:11 130:3 130:7	129:8 129:12 130:4 130:20		129:13	129:15	M; F; NE; PK; SP
131:17	131:20	M, P, R, NE, F, Arg	129:6 129:11 130:3 130:7	129:8 129:12 130:4 130:20		129:13	129:15	M; F; NE; PK; SP
131:22	132:5	M, P, R, NE, F, Arg	129:6 129:11 130:3 130:7	129:8 129:12 130:4 130:20		129:13	129:15	M; F; NE; PK; SP
132:7	132:7	M, P, R, NE, F	129:6 129:11 130:3 130:7	129:8 129:12 130:4 130:20		129:13	129:15	M; F; NE; PK; SP
132:25	133:4							
133:6	133:6							

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Plaintiff's Affirmative Designations

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Line Start	Line End		Line Start	Line End		Line Start	Line End	
133:9	133:19							
134:4	134:18	1002, H, F						
135:8	135:13	1002, H, F						
135:16	135:16	1002, H, F						
136:5	136:20	R, 1002, H, F, NE, SP, PK						
136:22	136:22	R, 1002, H, F, NE, SP, PK						
137:1	137:17	ID	137:18	138:1	IC			
137:18	138:1	ID	137:12	137:17	IC			
138:2	138:7	M, F	138:23 139:5	139:3 139:11				
138:9	138:22	M, F	138:23 139:5	139:3 139:11				
146:5	146:5	A, R, 1002, H, F, NE, SP, PK, ID, P, V	145:22	145:25	IC, NT			
146:20	146:21	A, R, 1002, F, NE, SP, PK, ID, P, V	145:22	145:25	IC, NT			
148:12	148:16	A, R, 1002, LC, F, NE, SP, PK, ID, P, V						
148:17	148:20	A, R, 1002, F, NE, SP, PK, ID, IO, P, V, NR						
149:18	149:22	A, R, 1002, H, F, NE, SP, PK, ID, P, V						

Eagle View Technologies, Inc. et al. v. Xactware Solutions, Inc. et. al.
Case No. 15-cv-07025 (RBK/JS) (Dist. N.J.)

Plaintiff's Affirmative Designations

Mike Fulton (October 4, 2017)								
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Line Start	Line End		Line Start	Line End		Line Start	Line End	
152:12	152:21	A, R, 1002, H, F, NE, SP, PK, ID, P, AT, V						
152:23	152:24	A, R, 1002, H, F, NE, SP, PK, ID, P, V						
152:25	153:2	A, R, 1002, H, F, NE, SP, PK, ID, P, V						
154:4	154:11	A, R, 1002, H, F, NE, SP, PK, ID, P, AT, V, BST						
154:13	154:16	ID, R, F, NE, SP, PK, P, V, BST						
154:17	154:20	ID, R, F, NE, SP, PK, P, V, BST						
154:21	154:24	ID, R, F, NE, SP, PK, P, V, BST						
155:1	155:9	ID, R, F, NE, SP, PK, P, V, AT						
155:11	155:23	ID, R, F, NE, SP, PK, P, V, BST						
155:24	156:5	ID, R, F, NE, SP, PK, P, V						
156:7	156:11	ID, R, F, NE, SP, PK, P, V						
157:17	158:15	ID, R, F, NE, SP, PK,						

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Curriculum Vitae

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Professional Experience

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08/2002–Present Professor
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University of Notre Dame, Notre Dame, Indiana

01/2003–6/2017 Professor
Department of Computer Science and Engineering
University of Notre Dame, Notre Dame, Indiana

08/1996–08/2002 Associate Professor
Department of Electrical Engineering
University of Notre Dame, Notre Dame, Indiana

08/1996–06/1997 Visiting Associate Professor
Department of Electrical and Computer Engineering
University of Delaware, Newark, Delaware

06/1994–08/1994 Research Associate
Intel Corporation, Hillsboro, Oregon

05/1993–08/1993 Research Associate
Air Force Office of Scientific Research
Rome Laboratories, Griffiss AFB, Rome, New York

08/1990–08/1996 Assistant Professor
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08/1989–08/1990 Graduate Research Assistant
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 Purdue University, West Lafayette, Indiana

08/1986–08/1990 Graduate Teaching Assistant
 School of Electrical Engineering
 Purdue University, West Lafayette, Indiana

06/1986–08/1986 Intern
 Engineering Physics Laboratory, E. I. duPont
 de Nemours & Company, Wilmington, Delaware

06/1985–08/1985 Intern
 Corporate Technology Center
 Sperry Corporation, Reston, Virginia

Education

08/1986–08/1990 *Ph.D., Electrical Engineering*, August 1990
 Purdue University, West Lafayette, Indiana
 Thesis: *Invariant Reconstruction of Curves and Sur-
 faces with Discontinuities with Applications in Com-
 puter Vision*
 Advisor: Professor Edward J. Delp
 GPA: 6.0/6.0

09/1982–06/1986 *B.S.E.E., Electrical Engineering*, June 1986
 University of Delaware, Newark, Delaware
 Thesis: *On the Theoretical Properties of Morphological
 Filters*
 Advisor: Professor Gonzalo R. Arce
 GPA: 4.0/4.0

Honors and Awards

1983 University of Delaware, Tau Beta Pi Prize

1984 University of Delaware, Engineering Scholar

1985–1986 University of Delaware, Liston A. Houston Scholarship

1986 IEEE Delaware Bay Section Engineering Award

1986 Valedictorian, University of Delaware
 1986 Purdue University Graduate Instructor Fellowship
 1986 Phi Kappa Phi Graduate Fellowship
 1986–1990 DuPont Graduate Fellowship in Electrical Engineering
 1986–1989 National Science Foundation Graduate Fellowship
 1993 Dept. of Electrical Engineering Outstanding Teacher Award
 2012 ICIP 2012 Outstanding Reviewer
 2013 IS&T 2013 Service Award

Honor Societies

1985–Present Eta Kappa Nu, Electrical Engineering Honor Society
 1985–Present Tau Beta Pi, Engineering Honor Society
 1985–Present Phi Kappa Phi, Academic Honor Society

Professional Activities

Associate Editor

IEEE Trans. on Image Processing, 1999–2003
IEEE Trans. on Circuits and Systems for Video Tech., 1997–2002
Journal of Electronic Imaging, 1995–1998

Special Issue Editor

Multimedia Systems, *Journal of Electronic Imaging*, 04/1996
 Still Image Compression, *Electronic Imaging Newsletter*, 01/1996

Best Paper Award Board Membership

IEEE Trans. on Circuits and Systems for Video Technology, 2002

Symposium Chairman

SPIE/IS&T Symposium on Electronic Imaging, 02/2004

Conference Chairman

IS&T Conf. Computational Imaging XVI, 02/2019
 IS&T Conf. Computational Imaging XV, 02/2018
 IS&T Conf. Computational Imaging XIV, 02/2017
 IS&T Conf. on Visual Information Proc. & Comm. VIII, 02/2017
 IS&T Conf. on Visual Information Proc. & Comm. VII, 02/2016
 SPIE/IS&T Conf. on Visual Information Proc. & Comm. VI, 02/2015
 SPIE/IS&T Conf. on Visual Information Proc. & Comm. V, 02/2014

SPIE/IS&T Conf. on Visual Information Proc. & Comm. IV, 02/2013
SPIE/IS&T Conf. on Visual Information Proc. & Comm. III, 01/2012
SPIE/IS&T Conf. on Visual Information Proc. & Comm. II, 01/2011
SPIE/IS&T Conf. on Visual Comm. and Image Processing, 01/2009
SPIE/IS&T Conf. on Computational Imaging, 02/2003
SPIE/IS&T Conf. on Image and Video Comm. and Proc., 02/2000
SPIE/IS&T Conf. on Visual Comm. and Image Processing, 02/1999
41st Midwest Symposium on Circuits and Systems, 08/1998
SPIE Conf. on Electronic Imaging and Signal Processing, 11/1996
SPIE/IS&T Conf. on Still Image Compression II, 02/1996
SPIE/IS&T Conf. on Image and Video Processing IV, 02/1996
SPIE/IS&T Conf. on Image and Video Processing III, 02/1995
SPIE/IS&T Conf. on Image and Video Processing II, 02/1994

Steering Committee Member

Visual Communications and Image Processing, 1998–2010
Midwest Symposium on Circuits and Systems, 1994–1999
Electronic Imaging, 2003–2005

Organizing Committee Member

Nonlinear Signal and Image Processing Workshop, 2001

Technical Program Committee

International Conference on Image Processing, 1998 – Present
SPIE Computational Imaging, 2003–2016
Visual Communications and Image Processing, 1997–2008
European Signal Processing Conference, 2015
IEEE Symposium on Industrial Electronics & Applications, 2012
International Conference on Multimedia & Expo, 2009–2010
Image and Video Communications and Processing III, 2005
Computational Imaging, 2004
International Conference on Pattern Recognition, 2000
Int. Conf. on Acoustics, Speech, & Signal Proc., 2000, 2006–Present
International Symposium on Circuits and Systems, 1998, 2005
9th IEEE Image and Multi. Signal Processing Workshop, 1996
Midwest Symposium on Circuits and Systems, 1994

Member

Institute of Electrical and Electronics Engineers, IEEE
Society of Photographic Instrumentation Engineers, SPIE
The Society for Imaging Science and Technology, IS&T

Panel Member for the following funding agencies

National Science Foundation

Reviewer for the following funding agencies

National Science Foundation

U.S. Army Research Office

Israel Science Foundation

Hong Kong Research Grants Council

Kentucky EPSCoR Program

North Dakota EPSCoR Program

Louisiana Board of Regents

Reviewer for the following archival journals

IEEE Transactions on Signal Processing

IEEE Transactions on Image Processing

IEEE Transactions on Circuits and Systems

IEEE Transactions on Circuits and Systems for Video Technology

IEEE Transactions on Instrumentation and Measurement

IEEE Transactions on Medical Imaging

IEEE Transactions on Pattern Analysis and Machine Intelligence

IEEE Transactions on Systems, Man, and Cybernetics

IEEE Transactions on Neural Networks

Pattern Recognition Letters

Signal Processing Letters

Computer Vision, Graphics, and Image Processing

Journal of the Optical Society of America

Journal of Mathematical Imaging and Vision

Applied Optics

IET Image Processing

Reviewer for the following textbook companies

Van Nostrand Reinhold, Electrical Engineering Division

McGraw-Hill, College/Schaum Division

MacMillan Publishing Company

Prentice Hall

Publications

Journals

R. L. Stevenson and G. R. Arce, "Binary Display of Hexagonally Sampled Continuous-Tone Images," *Journal of the Optical Society of America A*, Vol. 2, pp. 1009–1013, July 1985.

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timization of Multispectral Image Data,” *IEEE Transactions on Image Processing*, Vol. 4, No. 8, pp. 1109–1119, August 1995.

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L. Hollmann and **R. L. Stevenson**, “Adaptive whitening of ambient ocean noise with narrowband signal preservation” *Journal of the Acoustical Society of America*, Vol. 129, No. 6, pp. 3122, 3133, June, 2016.

R. Zhen and **R. L. Stevenson**, “Inertial Sensor Aided Multi-Image Nonuniform Motion Blur Removal Based on Motion Decomposition,” *Journal of Electronic Imaging*, Vol. 27, No. 5, October, 2018.

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R. Llados-Bernaus, M. Robertson and **R. L. Stevenson**, “A Stochastic technique for the removal of artifacts in compressed images and video”, in *Signal Recovery Techniques for Image and Video Compression and Transmission*, A. K. Katsaggelos and N. P. Galatsanos, Eds., Kluwer Academic Publishers, 1998.

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R. Schultz and **R. L. Stevenson**, “Bayesian Image and Video Enhancement Using a Non-Gaussian Prior,” in *Nonlinear Signal and Image Processing: Theory, Methods, and Applications*, K. Barner and G.

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J. Simpkins and **R. L. Stevenson**, “An Introduction to Super-Resolution Imaging,” in *Mathematical Optics: Classical, Quantum, and Imaging Methods*, V. Lakshminarayanan, Ed., Taylor & Francis Books, Inc., 2012.

J. Simpkins, **R. L. Stevenson**, and S. Borman, “Image Sequence Processing,” in *Encyclopedia of Optical Engineering*, R. G. Driggers and C. Hoffman, Eds., Taylor & Francis., 2015.

R. Zhen and **R. L. Stevenson**, “Image Demosaicing,” *Color Image and Video Enhancement*, pp. 13–54, Springer, 2015.

Edited Conference Proceedings

S. A. Rajala and **R. L. Stevenson**, Eds., *Image and Video Processing II*, SPIE Proceedings Series, 1994.

R. L. Stevenson and S. A. Rajala, Eds., *Image and Video Processing III*, SPIE Proceedings Series, 1995.

R. L. Stevenson and M. I. Sezan, Eds., *Image and Video Processing IV*, SPIE Proceedings Series, 1996.

R. L. Stevenson, A. Drukarev, and T. R. Gardos, Eds., *Still Image Compression II*, SPIE Proceedings Series, 1996.

C.-S. Li, **R. L. Stevenson**, and L. Zhou, Eds., *Electronic Imaging and Multimedia Systems*, SPIE Proceedings Series, 1996.

R. L. Stevenson, Ed., *Proceeding of the Midwest Symposium on Circuits and Systems*, 1998.

K. Aizawa, **R. L. Stevenson**, and Y.-Q. Zhang, Eds., *Visual Communications and Image Processing '99*, SPIE Proceedings Series, 1999.

B. Vasudev, T. R. Hsing, A. G. Tescher, and **R. L. Stevenson**, Eds., *Image and Video Communications and Processing 2000*, SPIE Proceedings Series, 2000.

C. Bouman and **R. L. Stevenson**, Eds., *Computational Imaging 2003*, SPIE Proceedings Series, 2003.

M. Rabbani and **R. L. Stevenson**, Eds., *Visual Communications and Image Processing 2009*, SPIE Proceedings Series, 2009.

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“Multi-Frame Integration for Video Enhancement,” Kodak Corp., Rochester, NY, August 4, 1995.

“Bayesian Estimation Techniques for Image/Video Processing,” Ricoh California Research Center, Palo Alto, CA, February 3, 1996.

“Bayesian Estimation Techniques for Image/Video Processing,” University of Delaware, Newark, DE, October 10, 1996.

“Issues in Video Compression,” Intel Corporation, Hillsboro, OR, June 21, 1997.

“Techniques for High-Speed Image Enhancement,” Sun Microsystems, Sunnyvale, CA, May 21, 1998.

“Stochastic Modeling for Image/Video Processing,” Purdue University, West Lafayette, IN, Nov. 12, 1998.

“High Performance Multimedia Applications Reserach,” Sun Microsystems, Sunnyvale, CA, Jan. 25, 1999.

“Video over the Internet,” D. E. Shaw & Co., New York, NY, May 4, 2000.

“Entertainment Video over the Internet,” Sun Microsystems, Sunnyvale, CA, Nov. 16, 2000.

“The Creative Scientist,” Keynote address at 16th Annual Undergraduate Research Symposium, University of Delaware, Newark, DE, May 5, 2001.

“Super-Resolution Camera Systems,” Thomson Consumer Electronics, Indianapolis, IN, November 28, 2001.

“Three-Dimensional Signal Processing,” Air Force Research Laboratory, Rome, New York, September 26, 2002.

“Bayesian Image and Video Restoration,” ECE Distinguished Speaker Seminar Series at the Illinois Institute of Technology, October 24, 2003.

“Error Resilient Video Coding,” Purdue University, West Lafayette, IN, May 17, 2005.

“Robust Video Compression Using Multiple Description Coding,” Indiana University-Purdue University Indianapolis, Indianapolis, IN, November 2, 2006.

“Bayesian-Based Image and Video Enhancement,” Digimarc Corporation, Beaverton, OR, July 27, 2011.

Dissertations/Theses Supervised

Ph.D. Dissertations

R. R. Schultz, “Multichannel Stochastic Image Models: Theory, Applications, and Implementations,” Ph.D. Dissertation, University of Notre Dame, November 1994.

T. P. O’Rourke, “Robust Image Communication: An Improved Design,” Ph.D. Dissertation, University of Notre Dame, January 1996.

B. E. Schmitz, “Enhancement of Sub-Sampled Color Image Data,” Ph.D. Dissertation, University of Notre Dame, March 1996.

R. Lladós-Bernaus, “Entropy Coding Techniques for Robust Video Compression,” Ph.D. Dissertation, University of Notre Dame, March 1998.

M. A. Robertson, “High-Quality Reconstruction of Digital Image and Video from Imperfect Observations,” Ph.D. Dissertation, University of Notre Dame, April 2001.

R. Magill, “Emulating an Output Queued Packet Switch with Systems Containing Input and Output Queueing,” Ph.D. Dissertation, University of Notre Dame, May 2003.

K. Erickson, “Quality Optimization of Standards - Compliant Encoded Video,” Ph.D. Dissertation, University of Notre Dame, May 2003.

S. Borman, “Topics in Multiframe Superresolution Restoration,” Ph.D. Dissertation, University of Notre Dame, May 2004.

G. Zhang, “Robust Scalable Video Compression Using Multiple Description Coding,” Ph.D. Dissertation, University of Notre Dame, May 2007.

J. Gai, “Robust Target Tracking: Theory, Applications and Implementations,” Ph.D. Dissertation, University of Notre Dame, May 2010.

Y. Li, “Multimodal Image Registration Through Iteratively Searching

Correspondences of Keypoints and Line Segments,” Ph.D. Dissertation, University of Notre Dame, December 2012.

J. Simpkins, “Modeling, Approximation, and Estimation of Spatially-Varying Blur in Photographic Systems,” Ph.D. Dissertation, University of Notre Dame, May 2016.

L. Hollmann, “Modeling, Approximation, and Estimation of Spatially-Varying Blur in Photographic Systems,” Ph.D. Dissertation, University of Notre Dame, November 2016.

R. Zhen, “Aided Blind Deblurring Image Degraded by Motion Blur,” Ph.D. Dissertation, University of Notre Dame, February 2017.

M.S.E.E. Theses

R. R. Schultz, “Improved Definition Image Expansion,” M.S.E.E. Thesis, University of Notre Dame, January 1992.

T. P. O’Rourke, “Human Visual Based Wavelet Decomposition for Image Compression,” M.S.E.E. Thesis, University of Notre Dame, December 1992.

B. E. Schmitz, “Curve Reconstruction: A Balance Between Smoothness and Discontinuity Preservation,” M.S.E.E. Thesis, University of Notre Dame, February 1993.

H. M. Zayed, “A Tunable Analog VLSI Network for Preserving Discontinuities in One-Dimensional Signals,” M.S.E.E Thesis, University of Notre Dame, November 1993 (co-adviser: G. Bernstein).

M. J. Wahoske, “Dual-Receiver Blind Identification for Image Blurs,” M.S.E.E Thesis, University of Notre Dame, August 1996 (co-adviser: R. Liu).

M. Robertson, “Computationally Efficient Post-Processing of Compressed Video Streams,” M.S.E.E Thesis, University of Notre Dame, February 1998.

G. Zhang, “Modified Fixed-Length Entropy Coding for Robust Video Compression,” M.S.E.E Thesis, University of Notre Dame, December 2002.

J. D. Simpkins, “Modeling and Estimation of Spatially-Varying Point-Spread Functions Due to Lens Aberrations and Defocus,” M.S.E.E. Thesis, University of Notre Dame, December 2011.

R. Zhen, “Enhanced Raw Image Capture and Deblurring,” M.S.E.E. Thesis, University of Notre Dame, May 2013.

Current Research Students

Shuang Zhang
Jieyu Li
Mohammad Rasool Izadi

Research Funding

Current Funding

Principal Investigator, Office of Naval Research, \$54,073 for “Signal Processing Methods to Isolate Individual Bat FM calls from within the noise of a swarm.”

Principal Investigator, EE Chair Fund, \$500,000 for “Video Enhancement Research.”

Prior Funding

Principal Investigator, Jesse H. Jones Faculty Research Fund, University of Notre Dame, \$9,750 for “Reliable Surface Parameter Estimation in Three-Dimensional Vision,” (with P. Flynn).

Principal Investigator, Jesse H. Jones Faculty Research Equipment Fund, University of Notre Dame, \$7,675 for “Hardware for the Acquisition and Display of Real-Time Video Signals,” (with K. Sauer).

Co-Principal Investigator, Rome Laboratory, F30602-92-C-0138, \$85,000 for “Multi-Frame Integration,” (with Y. Huang and R. Liu).

Co-Principal Investigator, National Science Foundation, CDA92-22905, \$58,126 for a “High Resolution Video Processing System,” (with D. Costello, K. Sauer, P. Bauer, Y. Huang and R. Liu).

Principal Investigator, Indiana Space Grant Consortium, \$7,300 for

“Real-Time Vision for Teleoperated Control of Unmanned Vehicles and Robots,” \$7,500 for “Robust Video Coding,” \$5,889 for “Robust Video Coding,”

Principal Investigator, Apple Computer, Inc., \$15,000 for “Color Palette Restoration,” \$16,467 equipment donation.

Co-Principal Investigator, Office of University Computing, University of Notre Dame, \$20,000 for “Computing for System Engineering,” (with D. Costello and A. Lumsdaine).

Co-Principal Investigator, National Aeronautics and Space Administration, NASA-NAG 3-1549, \$50,795 for “Integrated System Design for the Transmission of Image Data over Low Bit Rate Noisy Channels,” (with D. Costello and Y. Huang).

Principal Investigator, Rome Laboratory, F30602-94-1-0017, \$35,408 for “Multi-Frame Integration for the Extraction of High Resolution Still Images from Video Sequences.”

Principal Investigator, Rome Laboratory, F30602-94-1-0016, \$50,785 for “Parallel and Distributed Algorithms for High-Speed Image Processing,” (with A. Lumsdaine).

Principal Investigator, Intel Corp., \$68,000 for “Post-Processing Compressed Video Data,” \$15,000 equipment donation.

Co-Principal Investigator, Lockheed Martin, \$150,000 for “Robust Transmission of Images over Noisy Channels,” (with D. Costello and Y. Huang).

Principal Investigator, Apple Computer, Inc., \$19,100 for “Quicktake Image Enhancement,” \$15,000 equipment donation.

Co-Principal Investigator, Office of University Computing, University of Notre Dame, \$21,600 for “Multidisciplinary Engineering Design Laboratory,” (with J. Brockman, J. Kantor, J. Renaud, D. Kirkner, S. Batill, and P. Kogge).

Principal Investigator, Motorola Corp., \$91,252 for “Robust Transmission of Image Data over Low-Bit-Rate Noisy Channels,” (with D. Costello, R. Liu and Y. Huang).

Principal Investigator, Rome Laboratory, F30602-96-C-0235, \$199,964 for “Parallel and Distributed Algorithms for High-Speed Image Processing,” (with A. Lumsdaine).

Co-Principal Investigator, Office of University Computing, University of Notre Dame, \$23,000 for “An ATM Network for High-Speed Communications,” (with A. Lumsdaine).

Principal Investigator, Sun Microsystems, \$21,400 for “VIS-Based Image Enhancement.”

Co-Principal Investigator, IBM, \$309,544 for “Scalable Shared Memory: Case Studies,” (with A. Lumsdaine, N. Chrisochoides, J. Westerink, E. Maginn, M. Stadtherr).

Co-Principal Investigator, Army Research Office, DAAG55-98-1-0091, \$250,000 for “Scalable Meta-Computing for Computational Science and Engineering,” with A. Lumsdaine, N. Chrisochoides, J. Westerink, E. Maginn, M. Stadtherr).

Principal Investigator, Graduate School, University of Notre Dame, \$71,980 for “High-Resolution Video Processing,”.

Principal Investigator, Department of Defense, MDA904-98-C-B224, \$124,150 for “Temporal Image Enhancement,” (with A. Lumsdaine).

Co-Principal Investigator, Graduate School, University of Notre Dame, \$215,000 for “Scalable Meta-Computing for High Performance Computational Science and Engineering,” (with A. Lumsdaine, N. Chrisochoides, J. Westerink, E. Maginn, M. Stadtherr).

Principal Investigator, Sun Microsystems, \$55,060 for “Multimedia Architectures.”

Principal Investigator, Graduate School, University of Notre Dame, \$75,000 for “Sun Microsystems Embedded Center.”

Co-Principal Investigator, Indiana’s 21st Century Research & Technology Fund, \$829,714 for “Entertainment Video over the Internet,” (with E. Delp, B. Beyers, C. Rosenberg, P. Salama, and N. Shroff).

Principal Investigator, Sun Microsystems, \$40,000 for “Entertainment Video.”

Co-Principal Investigator, National Science Foundation, \$248,887 for “Instrumentation for Multidimensional Imaging and Applications”, (P. Flynn, K. Bowyer, and D.Z. Chen).

Principal Investigator, Department of the Air Force, \$75,000 for “Multi-Source Image Correlation and Analysis,” (with P. Flynn, and K. Bowyer).

Co-Principal Investigator, Indiana’s 21st Century Research & Technology Fund, \$856,576 for “Advanced Digital Video Compression: New Techniques for Security Applications,” (with E. Delp, L. Chrisopher, B. Brenner, C. Armstrong, and P. Salama).

Principal Investigator, Office of Naval Research, \$39,461 for “Biologically Inspired Approaches to Overcome Mutual-Interference by Active Sensor Systems.”

Teaching and Course Development

EE220	Devices and Systems in Electrical Engineering Developed: Fall 1998 Taught: Fall 1998, 1999, 2000
EE224/EE20224	Introduction to Electrical Engineering Taught: Fall 1990, 1992, 1995, 1999, 2000, 2006, 2007, 2008
EE242/EE20242	Electronic Circuits Taught: Spring 2001, 2002, 2003, 2004, 2005
EE30363	Random Phenomena in Electrical Engineering Taught: Spring 2010, 2011, 2012, 2013
EE30321	Embedded Systems Developed: Spring 2016 Taught: Spring 2016, 2017, 2018
EE40354	Multimedia Signals and Systems Developed: Fall 2012 Taught: Fall 2012, 2016, 2017; Spring 2014
EE471/EE40471	Digital Signal Processing Taught: Spring 1992, 1993, 1995, 1996, 2000, 2008
EG498	Multidisciplinary Engineering Design Laboratory

	Developed: Fall 1995 Taught: Fall 1995
EE498	Topics in Image Processing Taught: Fall 1994
EE573/EE60573	Random Processing, Estimation and Detection Theory Taught: Spring 2007, 2009
EE581/EE60581	Digital Image Processing Taught: Spring 1991, 1994, 1999, 2006, 2015; Fall 1997, 2001, 2003, 2010
EE598/EE60671	Advanced Digital Signal Processing Developed: Fall 2004 Taught: Fall 2004, 2005, 2011, 2013, 2014
EE598	Computer Vision Developed: Fall 1991 Taught: Fall 1991, 1993
EE663/EE80663	Advanced Stochastic Processes Developed: Spring 1998 Taught: Spring 1998, Fall 2002, 2009
ELEG631	Applications of Digital Signal Processing Developed: Fall 1996 Taught: Fall 1996, University of Delaware
CSE498P	Digital Multimedia Hub System Design Developed: Spring 2003 Taught: Spring 2003

University Services

University

Committee on Advising
2018–Present
Chair, Science and Technology Subcommittee of the Core Curriculum
Committee
2018–Present
Core Curriculum Committee
2018–Present
Club Supervisor, Notre Dame Machine Learning Club
2018–Present

Club Supervisor, Rubik's Cube Club of Notre Dame

2011–2015

University Committee on Research and Sponsored Programs

2006–2010

Intellectual Property Committee

2003–2006

ND's Technical Liaison to the Indiana Governor for Sun Microsystems

2000–2001

Committee on Technical Computing

1995–1996

University Committee on Computer and Information Sciences

1995–1996, 2002–2003

University Committee on Academic Technology

2003–2006

Faculty Senate

1993–1996

Freshman Orientation

1993–1995, 1998–2007

Engineering College

Ad-hoc Committee on First Year Engineering

2018–Present

Four Horsemen Venture Capital Fund Advisory Committee

2003–2004

CSE Chairman Search Committee

1999–2001

College Council

1997–2000

Undergraduate Studies Committee

1994–1996, 1998–1999, 2013–Present

College Computer Committee

1995–1996, 1997–2013

Ad hoc College Computer Committee

2001–2002, 2007

Friends of the MEP mentoring initiative

1992

Electrical Engineering Department

Ad-hoc Committee on the Curriculum

2017–Present

Director of Undergraduate Studies

2014–Present